

CLAIMS

What is claimed is:

1. A method for removing a sentinel lymph node, comprising the steps of:
 - 1 injecting a radiological contrast agent detectable by an imaging modality
 - 5 into an area of interest;
 - 1 identifying a sentinel lymph node in at least one area of draining lymph nodes that receive lymphatic fluid from the area of interest by imaging the at least one area of draining lymph nodes utilizing the imaging modality;
 - 10 introducing a percutaneous excision device into the at least one area of draining lymph nodes; and
 - 15 excising the identified sentinel lymph node in the at least one area of draining lymph nodes using the percutaneous excision device, where at least one of the introducing and the excising is performed under guidance by imaging at least portions of the identified sentinel lymph node and the excision device.
- 15 2. The method of claim 1, in which the imaging modality is selected from the group consisting of ultrasound imaging, computerized tomography (CT) scanning and magnetic resonance imaging (MRI).
3. The method of claim 1, in which during the imaging, at least portions of the identified sentinel lymph node and the percutaneous excision device are imaged utilizing
- 20 the imaging modality capable of detecting the injected radiological contrast agent.

4. The method of claim 1, in which the step of introducing the percutaneous excision device into the area of draining lymph nodes is performed under guidance by imaging at least portions of the identified sentinel lymph node and the percutaneous excision device utilizing the imaging modality and in which the step of excising the 5 identified sentinel lymph node using the percutaneous excision device is performed under guidance by imaging at least portions of the identified sentinel lymph node and the percutaneous excision device utilizing the imaging modality.

5. The method of claim 1, in which the injecting includes injecting the radiological contrast agent and at least one other agent to facilitate identification of the 10 sentinel lymph node.

6. The method of claim 5, in which the other agent is selected from the group consisting of a radioisotope and a blue dye.

7. The method of claim 1, in which the step of injecting further includes injection of a second agent in combination with the radiological contrast agent, further 15 comprising the step of confirming the identification of the target sentinel lymph node after the excision using a detection modality different from the imaging modality.

8. The method of claim 7, in which the second agent is a radioisotope and the detection modality is a gamma counter.

9. The method of claim 7, in which the second agent is a blue dye and the detection modality is visual inspection.

10. The method of claim 1, in which the area of interest is human breast.

11. A method, comprising:

5 injecting a radiological contrast agent and a second agent into an area of interest;

imaging at least one area of draining lymph nodes that receive lymphatic fluid from the area of interest utilizing a first imaging modality capable of detecting the radiological contrast agent; and

10 excising, using a percutaneous excision device, the identified sentinel lymph node in the at least one area of draining lymph nodes, where at least one of the imaging and excising includes detection of the sentinel lymph node utilizing the second agent to confirm identification of the sentinel lymph node.

15 12. The method of claim 11, in which the first imaging modality is capable of detecting the radiological contrast agent and is selected from the group consisting of ultrasound imaging, computerized tomography (CT) scanning and magnetic resonance imaging (MRI).

20 13. The method of claim 11, further comprising introducing a percutaneous excision device into the at least one area of draining lymph nodes and in which the excision is performed utilizing the percutaneous excision device.

14. The method of claim 13, in which excising the identified sentinel lymph node using the percutaneous excision device is performed under guidance by imaging at least portions of the identified sentinel lymph node and the percutaneous excision device utilizing at least one of the first imaging modality and detection utilizing the second agent.

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15. The method of claim 11, in which the second agent is selected from the group consisting of a radioisotope and a blue dye.

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16. The method of claim 11, in which the first imaging modality is ultrasound and in which the second agent is a radioisotope and the detection utilizing the second agent utilizes a gamma counter.

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17. The method of claim 11, in which the second agent is a blue dye and the detection utilizing the second agent is via visual inspection, and includes visually examining the excised sentinel lymph node to confirm identification of the sentinel lymph node upon appearance of the blue dye.

18. The method of claim 11, in which the area of interest is human breast.